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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,788	05/27/1999	ANTHONY J. NADALIN	AT9-99-081	7042

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Law Office of Joseph R. Burwell
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EXAMINER
KIM, JUNG W

ART UNIT	PAPER NUMBER
2132	4

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/321,788	NADALIN ET AL.	
	Examiner	Art Unit	
	Jung W Kim	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 27 May 1999 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because the drawings submitted are informal. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "85" has been used to designate both the step to open a response pipe upon successful method invocation which is diagramed on Figure 3 and the step to invoke the method ImpersonateNamedPipeClient() on Figure 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

1. The disclosure is objected to because of the following informalities: on page 4, line 7, the indefinite article "an" should be replaced with "a". Appropriate correction is required.

2. The use of the trademarks JAVA, WINDOWS, SUN MICROSYSTEMS, ACTIVEX, VISUAL BASIC, MICROSOFT, INTEL, NETSCAPE NAVIGATOR have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

3. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

1. Claim 7 is objected to because of the following informalities: in claim 7, the phrase "identifier is send by" should be "identifier is sent by". Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 6 discloses that the request defined in claim 1 is issued by the login service defined in claim 3. However, 2 distinct operations are requested in claim 1: "a

login request" and "a request for a native operating system identifier". Applicant must distinctly identify to which request the claim is referring.

4. Claims 2, 10, 12, 13, 16, 18, 21, 22, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. As per claim, the presence of the trademarks or trade names JAVA, WINDOWS NT, ACTIVEX, and VISUAL BASIC are not proper under 35 U.S.C. 112, second paragraph (see 37 CFR 2173.05(u)).

6. If a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. *Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982)*. The scope of the claim is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-8, 11, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bittinger U.S. Patent No. 6,453,362 in view of Ault U.S. Patent No. 5,974,566 (hereinafter Ault). As per claim 1, Bittinger covers a method for enabling a request from a client program on one machine to access a program on a remote application server on another machine comprising the following steps:

1) listening for a request for login credentials (see Bittinger, col. 7, lines 10-26);

2) responsive to a login request, making a request for a server stub (see Bittinger, col. 7, liens 41-45);

3) sending the stub to the client program (see Bittinger, col. 7, lines 45-47; col. 8, lines 20-21);

4) using the stub to instantiate a server skeleton (see Bittinger, Figure 3, reference numbers 35 and 36); and

5) using the server skeleton to enable the client program to access the resource (see Bittinger, Figure 3, reference number 36).

Moreover, although Bittinger does not describe the request from the client program as one from untrusted code, the remote application server includes an authentication server to verify the identity of the user (see Bittinger, col. 7, lines 8-21). Inherent in this feature is a protocol to verify the trustworthiness of the client. Finally, the above use of the term 'server stub' is interchangeable with the term 'operating system identifier' and the term 'server skeleton' with 'credential object'. However, Bittinger is silent on the matter of having the credential object login to the operating system. Ault does teach that it is well known in the art that credential objects are used to authenticate a user

through a 'DCE' login facility to access files on UNIX OS (see Ault, col. 5, lines 47-65). It would be obvious to one of ordinary skill in the art at the time the invention was made to have the credential object in the invention disclosed by Bittinger to login for the client to access the server's resource. The motivation for using the credential object to login the client to the server's resource is derived from the notion of reuse: Ault teaches that by storing the user profile information in an object, the information is locally retained and enables instantaneous verification of the client for the duration of the user's session and hence incurs performance benefits (see Ault, col. 10, lines 15-21).

4. As per claim 3, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 1 rejection under 35 U.S.C. 103(a). In addition, the listening step is performed by a login service (see Bittinger, col. 7, lines 18-20).

5. As per claim 4, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 3 rejection under 35 U.S.C. 103(a). In addition, the login service listens for requests on a socket (see Bittinger, col. 7, lines 13-18). By definition, named pipes are simply connections to transport data between two processes. Hence, a socket listening on a port is equivalent to a pipe named by an application.

6. As per claim 5, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 3 rejection under 35 U.S.C. 103(a). In addition, the login service listens for requests issued via RMI (see Bittinger, col. 4, lines 25-27). RMI is a JAVA specific model for remote procedure calls.

7. As per claim 6, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 3 rejection under 35 U.S.C. 103(a). In addition, Bittinger specifies that the operating system identifier is requested by the application resident during initialization and prior to the client's access of the server's resources (see Bittinger, Figure 3, reference number 30; col. 7, lines 36-49). Since a login service encompasses user verification and the resulting initialization of programs dedicated to servicing the user, the invention disclosed by Bittinger covers claim 6.

8. As per claim 7, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 1 rejection under 35 U.S.C. 103(a). Moreover, since the socket interface accepts and delivers messages over a TCP connection (see Bittinger, col. 7, lines 13-18), the OS identifier sent over to the client by the socket interface is effectively being sent over a response pipe.

9. As per claim 8, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 1 rejection under 35 U.S.C. 103(a). In addition, Bittinger discloses that after the authentication server on the remote machine validates the login information supplied by the client, the request is forwarded to the server application whereupon the server stub is instantiated. The server application then sends acknowledgement of the client call as well as the server stub (see Bittinger, col. 8, lines 9-24). It is well known in the art that authentication frameworks encompass authentication and user management features. Therefore, the server stub is created in an authentication framework.

10. As per claim 11, claim 11 corresponds to claims 1, 3, 4, 6, 7, 8 and they do not teach or define above the information claimed in claims 1, 3, 4, 6, 7, 8 and is therefore rejected under Bittinger for claim 11 for the same reasons set forth in the rejections of claims 1, 3, 4, 6, 7, 8.

11. As per claims 17, 19, 20, they are apparatus claims corresponding to claims 1, 3, 4, 6, 7, 8 and they do not teach or define above the information claimed in claims 1, 3, 4, 6, 7, 8 and is therefore rejected under Bittinger for claims 17, 19, 20 for the same reasons set forth in the rejections of claims 1, 3, 4, 6, 7, 8.

12. Claims 9, 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Bittinger in view of Ault as applied to claim 8 above, and further in view of Itoi,

"Pluggable Authentication Module for Windows NT" (hereinafter Itoi). As per claim 9, Bittinger covers a method for enabling a program written in untrusted code to access a native operating system resource as outlined above in the claim 8 rejection under 35 U.S.C. 103(a). Bittinger does not disclose that the authentication framework is a Pluggable Authentication Module. However, PAM is a popular alternative to modularize new methods and technologies into a security framework. Itoi discloses PAM as a way to make "authentication components replaceable, define[s] generic API for authentication mechanisms, and provide[s] single sign-on for users" (see Itoi, page 1, section 2). Furthermore, Bittinger discloses that the totality of his invention can be implemented as software (see Bittinger, col. 8, lines 31-35). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to implement the invention residing on the server application resident as disclosed by Bittinger using the Pluggable Authentication Method approach. The motivation for such an implementation would be to modularize the features of the invention disclosed by Bittinger using a widely accepted API and hence hide low-level authentication mechanisms from application programmers.

13. As per claim 14, it is an apparatus corresponding to claims 1, 3, 4, 6, 7, 8, 9 and they do not teach or define above the information claimed in claims 1, 3, 4, 6, 7, 8, 9 and is therefore rejected under Bittinger in view of Ault and Itoi for claim 14 for the same reasons set forth in the rejections of claims 1, 3, 4, 6, 7, 8, 9.

2. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bittinger in view of Ault and Itoi as applied to claim 14 above, and further in view of Win U.S. Patent No. 6,182,142 and Tang U.S. Patent No. 6,298,370. As per claim 15, Bittinger covers a method for enabling a request from a client program on one machine to access a program on a remote application server on another machine as outlined above in the claim 14 rejection under 35 U.S.C. 103(a). Itoi also describes API functions pam_start() and pam_authenticate() which corresponds to login interfaces, and pam_end() which corresponds to an abort interface (see Itoi, page 2, table 2.2). Although Itoi is silent on the matter of defining a commit and logout API, the activity of logging out a user is tied with logging in a user. Since logout is a standard feature of an authentication framework (see Win, col. 9, lines 31-38 for an example of a logout operation in an authentication framework) and commit operations are used to permanently enforce prior operations in programs dependent on strict sequential operation (see Tang, col. 131, lines 45-53 for a typical use of a commit operation), it would be obvious to one of ordinary skill in the art at the time the invention was made to include commit and logout APIs in the set of APIs found in the invention disclosed by Bittinger. The motivation for including the commit and logout APIs would be to establish a protocol of behavior for both the commit and logout tasks.

3. Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horstmann Core JAVA Volume I-Fundamentals (hereinafter Horstmann) in view of Frisch Essential System Administration 2nd Edition (hereinafter Frisch). As per claim 21,

Horstmann discloses a computer environment to enable JAVA programming for users on a computer (see Horstmann, chapter 2, "The JAVA Programming Environment"). Horstmann teaches several aspects to set up this environment including: installing the JDK, using a text editor, and setting environment variables (see Horstmann, page 23-25). Furthermore, Horstmann discloses two simple JAVA programs: a JAVA class that is a variation of the 'Hello World' variety for users to code, compile, and run on their computer (see Horstmann, page 52), as well as a JAVA class which adds two to an input string (see Horstmann, page 72). Horstmann is silent on the matter of enabling each program to run in an operating system thread as a different native operating system user. However, providing multiple users access on a single machine is a conventional OS feature. Frisch teaches how UNIX is devised to incorporate multiple users on a single OS (see Frisch, Chapter 5, 'User Accounts'). In addition, Frisch discloses a key feature of processes creation in UNIX: the owner of the process is the user who started it (see Frisch, page 46, 'Real and Effective User ID'). Finally, Frisch discloses that threads and processes are essentially the same (see Frisch, page 274, footnote). Hence, each user executing a JAVA class will effectively run each program in a thread as a different user. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to enable each JAVA program to run in an OS thread as a different user in the configuration disclosed by Horstmann. The motivation for enabling multiple users with JAVA programming environments is based on the gains in resource savings of having more than one user share an OS.

4. As per claim 23, Horstmann covers an application server as outlined above in the claim 21 rejection 35 U.S.C. 103(a). In addition, Frisch discloses several options to access remote systems including 'rlogin', 'telnet', and 'ftp' (Frisch, page 587, 4th paragraph). In each case, a user logs into the OS remotely and executes any JAVA class file owned by the user. The aforementioned covers all of claim 23.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Azagury et al. U. S. Patent No. 6,529,962 discloses a method to preserve thread identity during remote calls.

Ruehle et al. U.S. Patent No. 6,553,428 discloses a method to distribute object instantiation of native objects in JAVA.

Bond et al. U.S. Patent No. 6,275,938 discloses a method for security enhancement for untrusted executable code.

Kessler et al. U.S. Patent No. 6,157,961 discloses a client side stub interpreter.

Schofield U.S. Patent No. 6,308,225 discloses a method for performing distributed object calls.

Held et al. U.S. Patent No. 5,802,367 discloses a method and system for transparently executing code using a surrogate process.

Regnier et al. U.S. Patent No. 5,689,708 discloses a client/server computer systems having control of client-based application programs.

East et al. U.S. Patent No. 5,187,790 discloses a server impersonation of client processes in an object based computer operating system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung W Kim whose telephone number is 703-305-8289. The examiner can normally be reached on M-F 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 703-305-1830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-9939 for regular communications and 703-746-9939 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Jung W Kim
Examiner
Art Unit 2132

jk
August 11, 2003

GILBERTO BARRÓN
SUPERVISORY PATENT EXAMINER
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